

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 September 2001 (20.09.2001)

PCT

(10) International Publication Number
WO 01/67964 A3

(51) International Patent Classification⁷: **A61B 17/068.** (72) Inventors; and
17/128, 1/00 (75) Inventors/Applicants (for US only): SONNENSCHEIN,
Elazar [IL/IL]; 32 Rahavat Yavne, 84800 Beersheva
(IL). ZONNENSHEIN, Minelu [IL/IL]; 12 Yelim
Street, 85025 Meitar (IL). CHINNOCK, Randal
[US/US]; 53 McGilpin Road, Sturbridge, MA 01566
(US). CRAINICH, Lawrence [US/US]; 264 Ceda Road,
Charlestown, NH 03603 (US).

(21) International Application Number: **PCT/IL01/00238**

(22) International Filing Date: 12 March 2001 (12.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

135117	16 March 2000 (16.03.2000)	IL
138632	21 September 2000 (21.09.2000)	IL
139788	20 November 2000 (20.11.2000)	IL
141665	26 February 2001 (26.02.2001)	IL

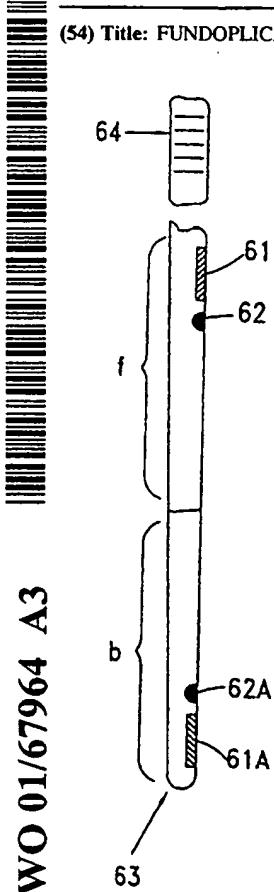
(71) Applicant (for all designated States except US): MEDIGUS LTD. [IL/IL]; 3 HaAmal Street, 84247 Beersheva (IL).

(74) Agents: LUZZATTO, Kfir et al.; Luzzatto & Luzzatto, P.O. Box 5352, 84152 Beer-Sheva (IL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: FUNDOPPLICATION APPARATUS AND METHOD



(57) Abstract: An endoscopic device for the partial fundoplication for the treatment of GERD, comprises: a) a distal bending portion (b) and a flexible portion (f) suitable to be positioned in extended shape within the esophagus of a subject; b) a positioning assembly comprising two separate elements (62, 62A), one of which (62A) is located on said distal bending portion (b), and the other (62) on said flexible portion (f); c) a stapling assembly comprising a staple ejecting device (61A), wherein said staple ejecting device (61A) is located on either said bending portion (b) or on said flexible portion (f), said staple ejecting devices (61A) being in working positioned relationship when said two separate elements (62, 62A) of said positioning assembly are aligned; and d) circuitry for determining when said two separate elements (62, 62A) of said positioning assembly are aligned.

WO 01/67964 A3



(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(88) **Date of publication of the international search report:**
18 April 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 01/00238

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61B17/068 A61B17/128 A61B1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 395 030 A (KURAMOTO ET AL.) 7 March 1995 (1995-03-07) cited in the application abstract; figures ---	1
A	EP 0 630 612 A (ETHICON INC.) 28 December 1994 (1994-12-28) abstract; figures column 1, line 55 -column 2, line 29 column 5, line 34 -column 6, line 10 ---	1
A	US 5 897 562 A (BOLANOS ET AL.) 27 April 1999 (1999-04-27) cited in the application abstract; figures ---	1

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "8" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

2 October 2001

08.02.02

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
 Fax: (+31-70) 340-3016

Authorized officer

GIMENEZ BURGOS, R

2

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 01/00238

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 403 326 A (HARRISON ET AL.) 4 April 1995 (1995-04-04) cited in the application abstract; figures ---	1
A	US 5 197 649 A (BESSLER ET AL.) 30 March 1993 (1993-03-30) cited in the application figures ---	1
A	US 5 787 897 A (KIETURAKIS) 4 August 1998 (1998-08-04) cited in the application abstract; figures ---	1
P,A	WO 00 53102 A (GAZAYERLI) 14 September 2000 (2000-09-14) cited in the application the whole document ---	1,26-28, 30-44,47
A	US 5 772 099 A (GRAVENER) 30 June 1998 (1998-06-30) claim 1 ---	1,26,27, 29-31
A	US 5 676 674 A (BOLANOS ET AL.) 14 October 1997 (1997-10-14) cited in the application column 6, paragraph 4 ---	1,43
A	US 5 814 055 A (HUGHETT ET AL.) 29 September 1998 (1998-09-29) claim 1; figures 8,12-17 ---	27,32
A	US 5 833 616 A (BELL ET AL.) 10 November 1998 (1998-11-10) figures 1,4,6 ---	39
P,A	US 6 099 542 A (KIM ET AL.) 8 August 2000 (2000-08-08) claim 1 ---	41
A	US 5 727 553 A (SAAD) 17 March 1998 (1998-03-17) ---	
A	WO 91 00049 A (KARL STORZ GMBH & CO.) 10 January 1991 (1991-01-10) page 17, line 6 -page 23, line 14; figures 1-6C ---	48,49, 51,52
A	DE 42 41 938 A (KARL STORZ GMBH & CO.) 16 June 1994 (1994-06-16) column 7, line 41 -column 9, line 33; figures ---	48
	-/-	

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 01/00238

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 889 662 A (MITSUI KAZUHIKO) 17 June 1975 (1975-06-17) column 4, line 4-50 ---	48,53
A	WO 89 11252 A (UNIV CONNECTICUT) 30 November 1989 (1989-11-30) page 19, line 3 -page 24, line 11; figures 1,2,4,5 ---	48-50
A	US 5 776 049 A (TAKAHASHI SUSUMU) 7 July 1998 (1998-07-07) column 5, line 3 -column 7, line 16 column 9, line 19 -column 10, line 19; figures 2A,B,9A,B -----	48

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL 01/00238

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: **20-25, 56, 62**, because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-19, 26-53, 63, 64

Remark on Protest

The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-19,26-53,63,64

Endoscopic device comprising a bending portion and a positioning assembly.

2. Claims: 54,55

Endoscope having an illumination channel and at least one objective lens.

3. Claims: 57-61

Endoscope comprising a system for measuring the distance between two objects.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 01/00238

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5395030	A	07-03-1995	JP	6047050 A		22-02-1994
EP 0630612	A	28-12-1994	AU	669794 B2		20-06-1996
			AU	6331894 A		01-12-1994
			CA	2124109 A1		25-11-1994
			EP	0630612 A1		28-12-1994
			JP	7051273 A		28-02-1995
			US	5395033 A		07-03-1995
US 5897562	A	27-04-1999	US	5676674 A		14-10-1997
			US	5571116 A		05-11-1996
US 5403326	A	04-04-1995	NONE			
US 5197649	A	30-03-1993	AU	661053 B2		13-07-1995
			AU	2724592 A		06-05-1993
			AU	3424995 A		01-02-1996
			CA	2081239 A1		30-04-1993
			EP	0540010 A2		05-05-1993
			JP	5337122 A		21-12-1993
			US	5411508 A		02-05-1995
US 5787897	A	04-08-1998	US	5558665 A		24-09-1996
			US	6067990 A		30-05-2000
			WO	9600030 A1		04-01-1996
WO 0053102	A	14-09-2000	US	6159146 A		12-12-2000
			AU	3623300 A		28-09-2000
			WO	0053102 A1		14-09-2000
US 5772099	A	30-06-1998	NONE			
US 5676674	A	14-10-1997	US	5571116 A		05-11-1996
			US	5897562 A		27-04-1999
US 5814055	A	29-09-1998	US	5662667 A		02-09-1997
			AU	716012 B2		17-02-2000
			AU	3680897 A		19-03-1998
			CA	2215636 A1		12-03-1998
			EP	0829235 A1		18-03-1998
			JP	10113351 A		06-05-1998
			AU	705597 B2		27-05-1999
			AU	6565396 A		27-03-1997
			CA	2185759 A1		20-03-1997
			EP	0769273 A2		23-04-1997
			JP	9182757 A		15-07-1997
US 5833616	A	10-11-1998	AU	4159097 A		19-03-1998
			WO	9808429 A1		05-03-1998
			US	6236876 B1		22-05-2001
US 6099542	A	08-08-2000	US	5830224 A		03-11-1998
			AU	1969797 A		01-10-1997
			CA	2249237 A1		18-09-1997
			EP	0889705 A1		13-01-1999
			JP	11512640 T		02-11-1999
			WO	9733522 A1		18-09-1997

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 01/00238

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5727553	A	17-03-1998	NONE		
WO 9100049	A	10-01-1991	DE	3921233 A1	14-02-1991
			AT	120628 T	15-04-1995
			WO	9100049 A1	10-01-1991
			DE	59008855 D1	11-05-1995
			EP	0434793 A1	03-07-1991
			JP	4500768 T	13-02-1992
			US	5166787 A	24-11-1992
DE 4241938	A	16-06-1994	DE	4241938 A1	16-06-1994
			WO	9413190 A1	23-06-1994
			US	2002007110 A1	17-01-2002
US 3889662	A	17-06-1975	DE	2425827 A1	19-12-1974
WO 8911252	A	30-11-1989	US	4938205 A	03-07-1990
			CA	1316252 A1	13-04-1993
			EP	0416025 A1	13-03-1991
			JP	4500321 T	23-01-1992
			WO	8911252 A1	30-11-1989
			US	5109276 A	28-04-1992
			US	5200838 A	06-04-1993
			US	5172685 A	22-12-1992
			US	5200819 A	06-04-1993
US 5776049	A	07-07-1998	JP	3220538 B2	22-10-2001
			JP	6194580 A	15-07-1994
			US	5522789 A	04-06-1996